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Editor - Captain L. B. Marshall, MC, USN

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Circular Letters

CHRISTMAS MESSAGE OF THE SURGEON GENERAL

"Man Doth Not Live by Bread Only"
(Deuteronomy 8th Chapter, 3d Verse)

A sense of the broader implications of the above passage of Scripture and an impelling desire on the part of everyone to give expression to its real meaning are significant elements in the institution of Christmas.

We cannot live by bread alone nor can we live by ourselves alone. We are constantly dependent upon the support, assistance and tolerance of our fellowmen. Our Navy is dependent upon the effective support of its various component bureaus and departments. Its Medical Department is second to none in importance. How well the Medical Department fulfills its lofty mission depends upon the faithful efforts of a multitude of individuals -- some in uniform -- some in civilian clothes -- all devoted to a common purpose, and serving in varied capacities at home and abroad.

The excellence of the Medical Department's performance is dependent also upon the interest and active support of those in and out of uniform, including Reserves and Regulars, retired and active, and upon countless civilians, to all of whom the Navy belongs. The enduring effort and loyal support of these men and women constitute an inspiration and a cause for profound gratitude among those of us charged with guiding the destinies of the Medical Department.

Therefore, at this traditional season of goodwill, it is to me a highly cherished privilege to extend to the legions of civilian and service personnel alike who together comprise the Medical Department of the Navy, as well as to its benefactors and well-wishers, my warm and personal Christmas Greetings and Best Wishes.

Christmas 1951

Rear Admiral Lamont Pugh, MC, USN
Surgeon General

Manual Artificial Respiration

The Holger-Nielson method of artificial respiration has been adopted by the Armed Forces and the Red Cross as the most efficient of the many methods presently being taught.

Recent research has led to the following conclusions:

(1) The back-pressure arm-lift method (Holger-Nielson) is the method of choice. (2) The back-pressure hip-lift method should be used, when indicated on victims with injuries of the arms. (3) The Sylvester method, with the victim lying on his back, should only be used when the victim cannot be placed face down.

The technic of the Holger-Nielson method is as follows:

1. Position of the Subject: Place the subject in the face down, prone position. Bend his elbows and place the hands one upon the other. Turn his face to one side, placing the cheek upon his hand.

2. Position of the Operator: Kneel on either the right or left knee, at the head of the subject, facing him. Place the knee at the side of the subject's head close to the forearm. Place the opposite foot near the elbow. If it is more comfortable, kneel on both knees, one on either side of the subject's head. Place your hands upon the flat of the subject's back in such a way that the heels of the hands lie just below a line running between the arm pits. With the tips of the thumbs just touching, spread the fingers downward and outward.

3. Compression Phase: Rock forward until the arms are approximately vertical and allow the weight of the upper part of your body to exert slow, steady, even pressure downward upon the hands. This forces air out of the lungs. Your elbows should be kept straight and the pressure exerted almost directly downward on the back.

4. Expansion Phase: Release the pressure, avoiding a final thrust, and commence to rock slowly backward. Place your hands upon the subject's arms just above his elbows, and draw his arms upward and toward you. Apply just enough lift to feel resistance and tension at the subject's shoulders. Do not bend your elbows, and as you rock backward the subject's arms will be drawn towards you. Then drop the arms gently to the ground. This completes the full cycle. The arm-lift expands the chest by pulling on the chest muscles, arching the back, and relieving the weight on the chest.

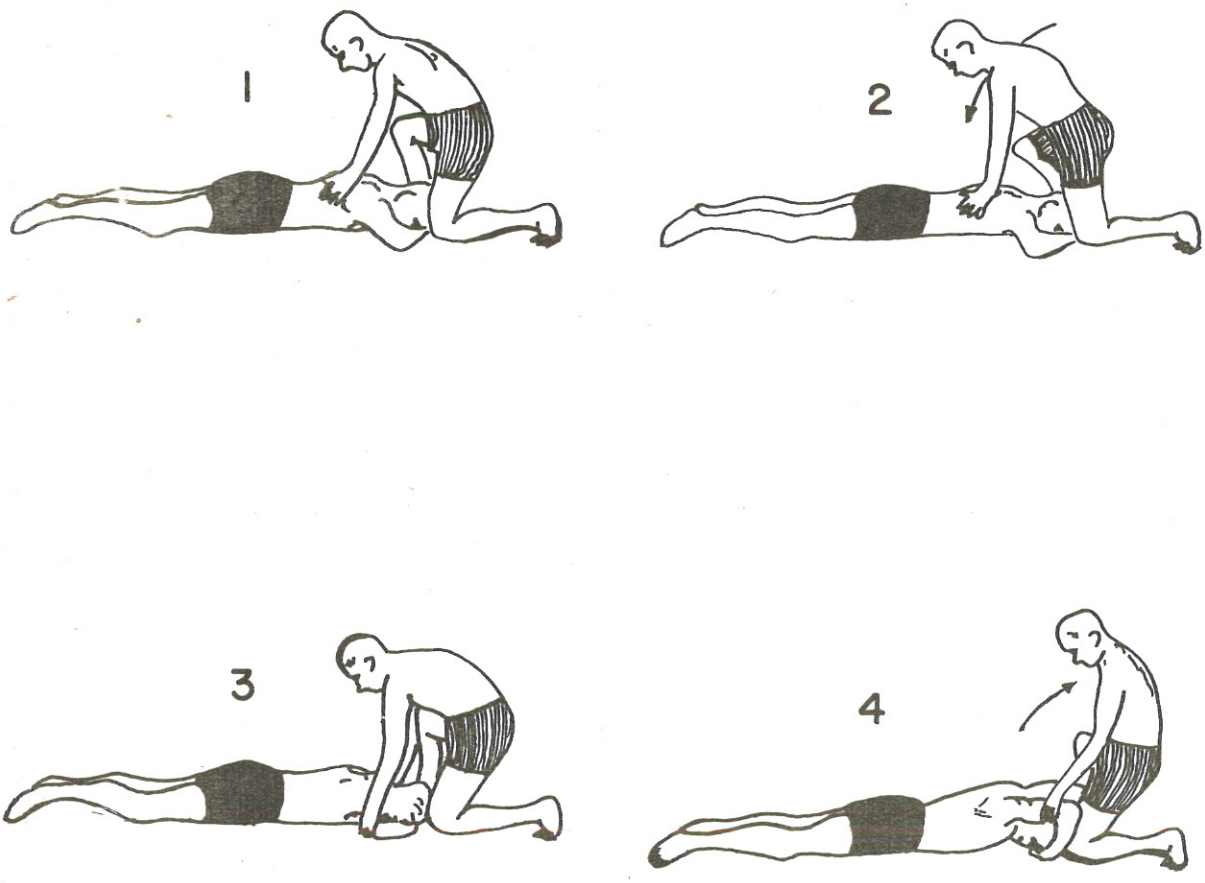
The cycle should be repeated 12 times per minute at a steady, uniform rate. The compression and expansion phases should occupy about equal time, the release periods being of minimum duration.

5. Additional Related Directions: It is all important that artificial respiration, when needed, be started quickly. There should be a slight inclination of the body in such a way that fluid drains better from the respiratory passage. The head of the subject should be extended, not flexed forward, and the chin should not sag lest obstruction of the respiratory passages occur. A check should be made to ascertain that the tongue or foreign objects are not obstructing the passages. These aspects can be cared for when placing the subject into position or shortly thereafter, between cycles. A smooth rhythm in performing

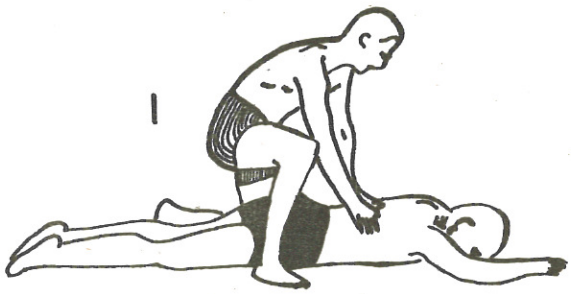
artificial respiration is desirable, but split-second timing is not essential. Shock should receive adequate attention, and the subject should remain recumbent after resuscitation until seen by a physician or until recovery seems assured.

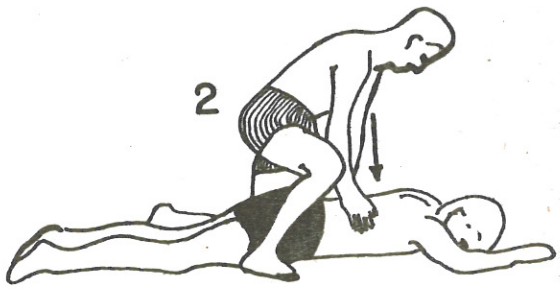
Future manuals, handbooks and first aid instructions will emphasize this method. (Professional Division, BuMed)

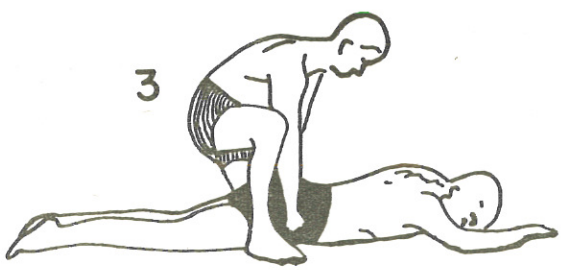
Back-Pressure Arm-Lift: Side View

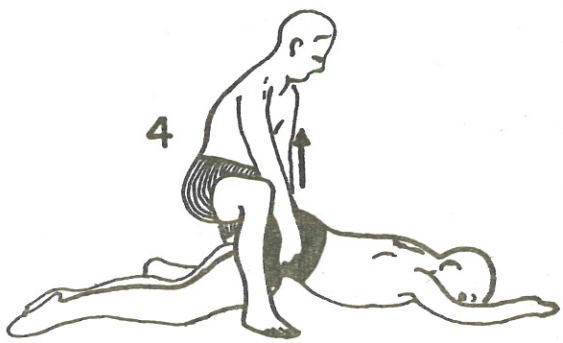


Back-Pressure Hip-Lift; Side View









The Treponemal Immobilization Test for Syphilis

The Treponemal Immobilization Test for Syphilis (TPI test) now being performed at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland, is required on all Naval personnel found to have a positive standard serologic test for syphilis (STS) but with no signs or symptoms diagnostic of the disease, or history thereof, prior to establishing a diagnosis of syphilis, seropositive only.

The chief advantages of the TPI test lie in its highly specific immunological nature through which the test may be used to detect false positive STS due to causes other than syphilis. The antigen in the test is a living suspension of virulent Treponema pallidum, causative agent of syphilis. False positive TPI test reactions are extremely rare. Positive reactions do occur in other treponemal infections, e.g., yaws, pinta and bejel.

The design of the naval testing program for the present is limited as follows:

1. Patients eligible for TPI test are those found to have a positive STS, but with no history of clear-cut diagnostic signs or symptoms of syphilis, i.e., patients with darkfield positive lesions are NOT to be tested. The test is to be used on those with a positive STS only.

2. Patients with a history of specific therapy for syphilis, e.g., arsenic and bismuth, or penicillin are NOT eligible, since treatment may alter the immunological picture and interfere with interpretation of the TPI test. These patients should be handled by the medical officer in the usual manner.

3. If for any reason, the medical officer desires a TPI test on an individual not meeting the above criteria, a detailed statement of the case history and reasons for requesting the test should be included with the serum samples and regular form for abstracting the case record.

Certain features peculiar to the TPI testing program are as follows:

1. Serum samples MUST BE COLLECTED AND SUBMITTED USING STERILE PRECAUTIONS. The TPI test is a complicated bacteriological procedure and the receipt of contaminated sera may result in delay in reporting test results, and an unnecessary expenditure of time and money in the laboratory.

2. A report of a TPI test will not be available ordinarily for 2 to 3 weeks after submission date. Because of its expensive nature the test is performed in batches of about 20 to 40 sera, whenever living suspensions of organisms are isolated from experimentally infected animals.

3. As with any immunological test upon which a definitive diagnosis rests, it is essential that the TPI test be performed on TWO SEPARATE serum samples, drawn at least 2 weeks apart, in order to avoid technical errors in labelling sera, shipment, etc. Under ordinary circumstances, no more than a total of 2 samples should be submitted per patient. When it is deemed necessary, treatment may be begun after receipt of a positive report on the first serum submitted, but the second serum should be collected prior to starting therapy in order that no penicillin be present in the serum to be tested.

4. (a) It is highly recommended that a fasting blood sample be drawn for testing since the presence of post-prandial fats in the serum interferes with technical performance of the test.

(b) Under no circumstances should whole blood be sent for testing, since hemolysis of erythrocytes makes the technical performance of the test impossible.

(c) No chemical preservatives or anticoagulants, such as merthiolate, citrate, oxalate, etc., should be added to the blood sample, since these substances kill T. pallidum and render the test unsatisfactory.

An important group to have serum submitted for TPI test consists of those individuals who are found to have a positive STS being examined at Naval and Marine Corps recruit training centers or first duty station of recalled reserves. Any individual thereupon found to have a negative TPI test should be diagnosed as non-syphilitic.

It has been reported from certain Naval stations, that medical officers are submitting sera for TPI test only from patients in whom syphilis is highly suspected because of a strongly positive STS, and not from patients with a weakly positive STS who are suspected of being false positive reactors. Since it has been proved that patients with syphilis may have a weakly positive, or even negative, STS, this practice must be discontinued, and all patients on whom two or more sera show reactivity with the STS (regardless of titer) should have the benefit of a TPI test and the result thereof placed in their health record. If positive, the diagnosis of syphilis should be made, and treatment should be given. It should be repeated that wherever a positive STS of any strength is the sole evidence of syphilis, a positive TPI test is required for confirmation. A complete search for all possible diagnostic evidence should precede or parallel the TPI test. No diagnosis of latent syphilis is ever complete without a spinal fluid examination, since the case may be one of asymptomatic neurosyphilis, rather than latent syphilis.

Since the U. S. Navy Medical Corps is the only large scale medical service in the world, in which the TPI test is available for the diagnosis of latent syphilis, all officers and hospital corpsmen are urged to cooperate in adhering to the program as outlined herein and in BuMed Circular Letter 51-59 (published in the Medical News Letter, Vol. 17, No. 9).

In an as yet unpublished series of patients tested at the Naval Medical Research Institute, of sera submitted from patients with persistent positive STS reactions only, over 30 per cent have shown negative TPI test. These 30 per cent represent false positive STS reactors who should not be stigmatized with a diagnosis of syphilis. (Preventive Medicine Division, BuMed)

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Sympathectomy in the Treatment of Frostbite

In cases of frostbite and cold injury there are pronounced changes in the local circulation from the beginning of the exposure until full recovery has been

achieved. Altered vasomotor function may even persist as a more or less permanent sequel to the injury. Since the vascular changes which occur during and immediately after the exposure and after the period of inflammatory hyperemia are characteristically those of vasoconstriction and sympathetic overactivity, sympathetic interruption should modify the natural course of events.

The role of sympathectomy in the intermediate treatment of frostbite as well as in the care of the late sequelae seems fairly clearly defined. The cases available for analysis are not numerous, but the months or years of difficulty which have preceded sympathectomy serve in a sense as a valid control in each case for the alterations which take place afterward. The shorter the interval between injury and operation the more difficult is objective evaluation of the procedure. Frostbite results in variable permanent damage and it is difficult or impossible to estimate the eventual outcome in any patient shortly after injury. When a number of months have passed by, however, the situation is generally sufficiently well stabilized to permit one to judge objectively the results of treatment in any given patient.

In those relatively uncommon cases in which obliterative arterial changes have developed as a consequence of frostbite, the response to sympathectomy will depend, as in other sorts of obliterative arterial disease, upon the magnitude of associated vasospastic phenomena or upon the capacity of the vascular bed to undergo vasodilatation as the result of elimination of vasoconstrictor impulses.

The persistent vasospastic phenomena and associated symptoms which so commonly follow frostbite and the difficulties experienced upon exposure to cold are generally relieved entirely or almost completely by operation. When such annoying symptoms of increased vasomotor activity or bothersome sensitivity to cold persist for a number of months they are unlikely to disappear spontaneously. The increased circulation resulting from sympathectomy appears definitely to facilitate the healing of ulcers. It is thought that in those patients whose periods of hospitalization were prolonged many months because of slow-to-heal ulcers which remained after debridement of areas of gangrene or amputation of toes, early sympathectomy could have shortened the periods of hospitalization and produced better end results.

Sympathectomy as a measure to be applied in the intermediate phase of treatment of frostbite and in the treatment of its late sequelae resembles the use of sympathectomy in similar stages of trench foot, with the difference that painful sequelae which apparently result from damage to small nerves or nerve endings and which seem unrelated to vasoconstriction or vasodilation follow trench foot much more commonly than frostbite. Hence a larger percentage of patients requiring sympathectomy for frostbite will experience complete relief than is the case with patients suffering from trench foot.

The use of sympathectomy and sympathetic blocks early in frostbite, within the first week after injury, needs further clarification. The observations described in the literature are based principally upon experiences with

sympathetic block. There are recorded only a small number of cases treated by sympathectomy and this report adds only a few additional observations. It is difficult to evaluate the results of any method of treatment early in frostbite. The injury is too variable to permit one to estimate accurately what the outcome in any given case would be without any treatment at all. However, almost all of the recorded observations are in essential agreement on the apparent effects of sympathetic interruption i.e., prompt relief of any pain or sensitivity that may be present, rapid subsidence of edema, quicker demarcation of gangrenous and viable parts and quicker healing of residual ulcers. It is also of interest that similar conclusions concerning the effect of sympathetic interruption have been reached in the few cases of apparently equal bilateral involvement in which only one limb has been treated leaving the other to serve in a sense as a control.

No clinical experiences with the use of sympathetic interruption as an immediate emergency measure in the treatment of frostbite are recorded in the literature. The results of sympathetic block, sympathectomy and employment of general vasodilating agents in the immediate treatment of experimental frostbite are variable. It is of interest, however, that such measures have either not altered the outcome at all or have brought about a decrease in the incidence and extent of tissue loss. None of these experiments has shown such measures to be harmful. Carefully studied cases of human frostbite treated in this fashion are sorely needed. (Surg., Gynec. & Obstet., Dec. 1951, H. B. Shumacker, Jr.)

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Pantothenic Acid in Paralytic Ileus

Jurgens and Pfaltz (1944) fed rats with a diet containing no pantothenic acid and observed the lesions thereby produced. The rats usually died between the 14th and 18th weeks of the experiment. A constant syndrome of hypovitaminosis developed, and necropsy showed inflammation in the respiratory tract, hemorrhages in the adrenals, fatty degeneration of the liver, greying of the hair, hemorrhagic rhinitis, and atony and distention of the gastrointestinal tract. The bowel became enormously distended, with loss of all peristalic movements, and the lumen became filled with dark-brown exudate. If pantothenic acid was given to these rats before death, the distention disappeared and normal motility of the bowels returned.

As the bowel changes resulting from deprivation of pantothenic acid in rats appear strikingly similar to those seen in paralytic ileus in man, it was decided to treat paralytic ileus in man with pantothenic acid.

Pantothenic acid is one of the components of the vitamin-B complex, and is present in all body tissues. It is a component of the co-enzyme for acetylation, being concerned in the formation of acetylcholine. Possibly herein lies the explanation of its effectiveness in the treatment of paralytic ileus.

Sixteen cases of paralytic ileus were successfully treated with pantothenic acid. Each was considered to have severe ileus, characterized by the vomiting of dark brown fluid. Other cases of postoperative abdominal distention not amounting to paralytic ileus were treated with pantothenic acid but are not described here, because it is felt that a successful result with only moderate distention, and before the onset of fecal vomiting, proves little; but it is noteworthy that none of these cases deteriorated into severe paralytic ileus. Each patient had received at least 2 enemas without result after the onset of ileus. In addition, the fecal vomiting necessitated gastric aspiration, and consequently intravenous fluid, in all 16 cases.

Pantothenic acid was administered as the soluble calcium salt, 50 mg. per ml., by intramuscular injection. Some patients received only one dose of 50 mg.; others received 2 or 3 injections. In all except 1 case, however, flatus was passed before a second injection was given.

The passage of flatus is probably the most important sign of the return of bowel motility; the presence or absence of bowel sounds is unreliable as a criterion of the degree of paralytic ileus. In some cases the results were dramatic, a bowel action following within 2-3 hours of the administration of pantothenic acid. In all cases a striking feature was an improvement in the patient's general condition. Some of the patients who were seen late after the onset of paralytic ileus had been variously treated with acetylcholine, pituitary extract, neostigmine and di-isopropyl fluorophosphonate, but without apparent benefit. All those receiving pantothenic acid made a good recovery. (The Lancet, 10 Nov. 1951, J. E. Jacques)

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Lymph Node Tuberculosis and Its Treatment in Accessible Nodes

Lymph node tuberculosis still presents its own special problems which must be solved by the best methods available whether they are recent or of long standing.

Lymph nodes are involved in the course of tuberculosis, as in the primary complex of the pulmonary disease of childhood; and it is logical to assume that the origin of infection in the peripheral nodes also lies in the area drained by them. All cases cannot be explained on this basis, however, and undoubtedly hematogenous infection plays an important role. The predilection for the neck in hematogenous infection is probably on the basis of lowered tissue resistance due to previous infections of a different nature.

The human type of tubercle bacillus is responsible for all but an occasional case of lymph node disease.

Since the treatment employed is determined by the pathologic condition present, certain features of the pathology of tuberculosis in general and lymph node tuberculosis in particular should be emphasized. Tuberculosis usually commences as a generalized infection with more or less systemic reaction. The

local manifestations which follow are characterized by an acute inflammatory process, the exudative phase, and, when lymph nodes are involved, this is manifested by swelling, tenderness and often local heat. This is followed by tubercle formation, caseation necrosis and cold abscess. The process may be halted by fibrosis or calcification at any point but there is always a perilymphadenitis present which binds the involved nodes to one another and to the surrounding tissue. Liquefaction starting within the node usually perforates slowly into the surrounding tissue, and the resulting cold abscess has a wall of fibrous and tuberculous granulation tissue. When the pathologic process is halted by fibrosis, the encapsulated caseous material and tuberculous pus harbor organisms for an indefinite time which are capable of reactivating the infection, just as happens in pulmonary caseous foci. In this connection it must be remembered also that tuberculous lymphadenitis may be only the local manifestation of a general infection with active foci elsewhere, which must always be sought.

The ideal treatment for tuberculosis, regardless of its site, is surgical eradication if this can be accomplished, since it is better to remove an infection than to encapsulate it. However, the application of surgical excision to accessible lymph nodes seems to be a controversial subject. In the first place, surgical removal of tuberculous nodes was highly successful 35 years ago and there is nothing in the present status of the disease or in modern surgical skill which should alter the case. In the second place, excisional therapy for pulmonary tuberculosis is a widely accepted and efficacious form of treatment and the same principle applied to lymph node tuberculosis should be even more effective and certainly less hazardous. Nevertheless, cases for lymph node surgery should be selected with as much care as those for pulmonary surgery; an adequate surgical procedure should be employed and full use should be made of the various adjunctive treatments, many of which were not available to the surgeons of the preceding generation.

The same principles apply to the selection of cases for lymph node surgery which apply to the selection of other cases of tuberculosis for surgery. The patient should be a "good chronic." Operation should not be undertaken in the presence of an acute exudative infection nor should lymph node surgery be attempted in the presence of active foci elsewhere except under certain definite conditions. The general condition of the patient should be sufficiently good to permit a long operation.

The surgical procedure has recently been described by the writer (1948) and is essentially the same as that employed by Dowd. All of the important structures are preserved except, rarely, the mandibular branch of the facial nerve which may be damaged, although often only temporarily.

In this respect the operation differs materially from the radical neck dissection for malignancy. In that operation, important structures are sacrificed to ensure complete removal of malignant cells. With tuberculous nodes it is better to preserve the structures and perform another operation if additional nodes become swollen, something which is rarely successful where cancer is involved. Obviously, the extent of the disease has a bearing on the likelihood

of reoperation but, nevertheless, reoperation is the exception and not the rule. In the end result the scar is inconspicuous, deformity is absent and the disease is controlled.

Careful selection of cases implies that surgery is not applicable to all cases. In some it is inadvisable and in others it is unnecessary. In still others it requires the help of other forms of therapy. The general measures of rest, adequate diet and hygienic surroundings should be employed in all cases. These measures are primary in the acute form of the disease, and in the mild forms no other treatment may be needed. For the most part, however, this form of treatment is chiefly an adjunct to more specific forms.

Roentgen irradiation has long been a treatment for tuberculous nodes. By producing fibrosis it acts to supplement nature's effort to encapsulate the disease. It cannot destroy Mycobacterium tuberculosis; it cannot remove caseation; it cannot cause the absorption of tuberculous pus and may even hasten its appearance. Furthermore, the incidence of activation of tuberculosis in other parts of the body after irradiation of lymph nodes has been observed too often to consider it a mere coincidence, even though the relation cannot be definitely proved. Its use should be limited to the treatment of sinuses after the caseation has largely disappeared and in that stage of the infection between the exudative phase and the establishment of caseation. It can then be a valuable adjunct.

Chemotherapy, notably with streptomycin and PAS, is a fairly recent and valuable addition to the therapy of tuberculous lymphadenitis but the wave of enthusiasm it has evoked in this connection is not justified by the results. Antimicrobial drugs have their chief effect on the early, exudative form of the disease and have little value in the treatment of caseous foci or cold abscesses. However, chronic tuberculous sinuses do respond well to antimicrobial therapy. In all cases the microorganisms must be sensitive to the drug; and in all cases prolonged use of the drug will result in drug-resistant microorganisms. The concomitant use of PAS will retard this resistance but cannot prevent it. Hence, antimicrobial drugs should be employed for clear indications or when nothing else is available, lest an occasion arise later when the drug is urgently needed and proves to be ineffectual because the microorganisms are resistant. One of the prominent indications for the use of chemotherapy is in conjunction with surgery as a prophylaxis against spread, particularly in those instances when surgical removal of tuberculous nodes must be undertaken in the presence of active foci elsewhere. When the danger of spread is past, antimicrobial therapy should be discontinued.

The most recent adjunct is the streptokinase-streptodornase combination of proteolytic enzymes developed by Tillett, Sherry and Christensen which has been used by Hazelhurst in the treatment of cold abscesses. Peripheral lymph nodes may become involved in the course of pulmonary tuberculosis and they are prone to break down into cold abscesses which have a bad effect on the pulmonary disease. Because of the pulmonary focus, excision of the nodes is inadvisable and simple drainage of the cold abscesses usually results in chronic draining sinuses. However, the use of these enzymes in the cold abscess cavity after wide drainage has been established produces a biologic debridement of the

caseous material, permitting the growth of healthy granulations and closure of the sinus. The effect of such a procedure on the pulmonary focus is frequently dramatic. Later, when the condition of the patient warrants, excision of the nodes can be performed. (Editorial, Am. Rev. Tuberc., Dec. 1951, C. W. Lester)

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The Evanston Dental Caries Study

Former reports from The Evanston Dental Caries Study have been concerned with the significance of artifically fluoridated drinking water and its influence on dental caries experience. Briefly these reports are as follows: (1) The determination of fluorine in teeth, in dental cements and in foods purchased locally; (2) the outline of the study, the school clinics, and clinical and radiographic procedures; (3) the large numbers of communal water supplies containing fluorides found in Indiana, Ohio, Illinois, South Dakota and Texas and the number of people having access to these waters grouped according to fluorine strengths; (4) the most prevalent type of lactobacillus, using the Hadley and Bunting classification. Also after 12 months of fluorine there was a displacement of about 5 % of the cases of the 6 and 8 year old children from the higher count groups (over 1000 lacto per ml.) to the lower count groups (those under 1000 ml.); (5) the relationship of the fluorine content of saliva on the prevalence of dental caries and that of the fluorine content of saliva on the lactobacillus counts; (6) the caries rate for the 6, 7 and 8 year old children after 12 to 22 months of fluoridated water showed an increase in the rate of the deciduous teeth for the 6 and 8 year old children while the rate for the 7 year olds was decreased. A reduction was shown in the decayed, missing and filled rate of the permanent teeth of the 6, 7 and 8 year olds.

The current report is based on the caries rates of the 12, 13 and 14 year old children in Evanston after 23 to 34 months' exposure to fluoridated drinking water. The rates show a reduction of 12.19 % for these children in the decayed, missing and filled permanent teeth.

The precarious lesions of the permanent teeth were reduced by 55.7 % for the 12 year olds, 38.80 % for the 13 year olds and 33.3 % for the 14 year olds. The 13 year old children demonstrated the greatest increase in immune cases, that of 146.0 %. An increase of that amount appears rather staggering but when considering the actual number of immune cases per 100 children, 1.02 in 1946, the increase to 2.51 in 1949 is only 1.49 cases per 100 children.

The lowered caries rate for Evanston in 1949 is apparently attributed to the fluoridated water. There is a reduction in the dental caries experience of the permanent teeth of all 3 age groups. This reduction may be due partially to the very widespread use of the urea dentifrices. Topical application of sodium fluoride is now given to many patients. The authors have made a determined effort to have accurate records of its use in Evanston. There may be a slight inclination toward better oral hygiene by the students as they become acquainted

with the study by the authors' frequent visits in the schools. However, until a definite percentage reduction of the caries rate of the study area is established that is materially less than the prevailing caries rate of the control area, (Oak Park), where it is known that topical application of sodium fluoride is given and urea dentifrices probably are used to about the same extent as in Evanston, the authors feel that this reduction shown here may NOT be assumed to be due entirely to the action of sodium fluoride. (J. Dent. Research, Oct. 1951, I. N. Hill, J. R. Blayney & W. Wolfe)

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Vaccination of Human Beings Against Mumps: Vaccine Administered at the Start of an Epidemic

The public health significance of a vaccine against mumps involves not only its ability to protect the susceptible individual against the clinical disease but also its effectiveness in controlling its epidemic spread. The author has demonstrated that a chick-embryo-tissue inactivated mumps vaccine evokes an adequate serum antibody response in susceptible human beings and reduces their chances of developing a clinical case of mumps on subsequent exposure to about one third that of unvaccinated individuals, if sufficient time elapses for immunity to develop. When mumps does develop in spite of previous vaccination, the clinical manifestations are definitely milder and with fewer complications than in the unvaccinated cases.

Evidence that mass vaccination with mumps vaccine may shorten the duration and lessen the severity of a mumps epidemic, even when administered after the epidemic has started, is presented. While under certain circumstances the routine prophylactic mass immunization of a particular population group might be justified, the more practical use would be to control an outbreak after the early cases had indicated the possibility of an epidemic.

In this study an original 10 cases had occurred in a population of 2,500 men. An additional 32 secondary cases occurred before a total of 1,355 men were given mumps vaccine, following which 305 cases of mumps developed in this population. The individuals were distributed in 9 camps, each of which, in general, could be considered as a separate population group. The proportion of the population of each camp given mumps vaccine varied from 0 to 90 %. By each method of comparison used there was consistent evidence that the severity and duration of the epidemic by camps decreased with the increasing percentage of the population vaccinated.

Where no vaccine was administered the epidemics continued for up to 14 weeks, with a total incidence of 131 cases per 1,000 population, and did not cease until the natural susceptibility rate had been reduced below 50 %. In a camp where 90 % of the population had received vaccine the epidemic lasted but 1 week (except for a single case 14 weeks later); there was a total incidence of 40 per 1,000 and there was still 61 percent of its population naturally susceptible at the time of the last case. It should be pointed out that this entire study was

conducted in a population which was originally highly susceptible to mumps (67 percent), compared to what is usually seen in the native adult male population in the United States. Also, the conditions under which these men lived were more conducive to spread of respiratory disease than the average conditions in either school or military dormitories. Yet, in spite of these factors tending to make epidemic control more difficult, it is believed that the evidence would indicate that control of an epidemic of mumps could be obtained by vaccinating the susceptible population at the time of the appearance of the first wave of secondary cases.

The rapidity with which immunity develops following vaccination will, of course, be of great importance in determining its effectiveness in controlling an epidemic if administered after the epidemic has begun. The first dose of vaccine in this study was made up in an adjuvant mixture calculated to slow down adsorption and, on the basis of serum antibody response, caused immunity to develop more slowly than similar vaccine made up in saline. Likewise, because of the nature of the population, only 1 dose of vaccine could be given to the majority of individuals vaccinated in this study. Therefore, the use of a saline-suspended vaccine given in 2 doses perhaps 2 weeks apart might be expected to give even better results than here reported in controlling an epidemic of mumps after it had begun. (Am. J. Hyg., Nov. 1951, K. Habel)

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The Post-Coronary Syndrome

The patient who suffers an acute coronary thrombosis and survives the first 24 hours still has three difficult periods to pass. During the first phase, which lasts from 2 to 18 days, the prognosis is precarious because of cardiac insufficiency (which is a direct consequence of damage to the myocardium), serious arrhythmia, thromboembolic phenomena and shock. Though uncommon, myocardial or septal rupture may occur.

In the second phase - which begins after the patient becomes ambulatory-congestive heart failure, angina pectoris and another coronary occlusion are the greatest threats to life. Mortality is greatest in the first 2 months following the attack.

The third phase begins when the patient attempts to resume his ordinary activities and returns to work. Besides the shoulder-hand syndrome other symptoms commonly appear during this third period. Although not a threat to his life, these interfere greatly with his living. In one series, almost half the patients experienced some degree of pain, dyspnea or weakness during work. Yater reported that dyspnea on exertion was the most prominent symptom following healing of the infarct, with angina of effort running a close second, and tiredness was fairly common.

This symptom complex, because it occurs 4 to 6 months after the acute attack, may be termed the post-coronary syndrome. It is important in the rehabilitation of the male patient who has had a "coronary."

The main complaints are tightness or soreness in the front of the chest, difficulty in breathing and weakness or tiredness. After several days to weeks of these symptoms, the patient, who recently has had an unforgettable "coronary," again seeks medical help. Sometimes he quits work and stays home, brooding over the feeling that he is finished, unable to work any longer, and can never be as he was before the attack. He may continue to work, but always with the constant dread that the symptoms are due to a badly damaged heart.

Once this syndrome is recognized and the difficult period is by-passed, the patient can work and continue his usual activities without fear. It does seem important to prevent the post-coronary syndrome by proper indoctrination if possible, and to recognize it when it does occur. The welfare of the patient and of his family is greatly affected. At this or any other point, careless or ill-timed remarks by the physician may initiate a cardiac neurosis.

The man who has post-coronary syndrome should not be regarded as having anxiety or cardiac neurosis. The anginal syndrome, congestive heart failure or another attack of coronary occlusion may occur at any time, whether or not the patient resumes work. For this reason, it is here that optimism and reassurance become very important forms of treatment.

Levine stated this problem most clearly: "I think patients spend too long a time in the treatment of acute coronary thrombosis. Some people lose their jobs permanently; they never get back to work because someone was free in telling them to take six months off."

After a reasonable convalescence, severe restrictions of physical activity beyond the requirements imposed by limited cardiac reserve afford little or no protection to the patient who has survived an acute attack. Work does not aggravate the symptoms which characterize the post-coronary syndrome, nor does it predispose the patient to further attacks of coronary occlusion or to heart failure. The occurrence of these symptoms of the post-coronary syndrome, unless severe angina pectoris or definite cardiac failure is present, is not an indication to advise the patient again to quit his work. (Postgrad. Med., Nov. 1951, N. Flaxman)

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Severe Hemorrhage Due to Tromexan

Tromexan, a new anticoagulant, has recently been accepted for general use. Chemically, it is described as ethyl biscoumacetate. It is most widely recognized as "Tromexan" but is also known as "Pelentan," "B.O.E.A." and "D.E.A."

Dicumarol and Tromexan are related members of the coumarin series of drugs. Each is presumed to act in similar fashion, by interfering with the normal production of prothrombin by the liver. The exact mode of action is as yet unknown. The possibility of hemorrhage after Dicumarol administration is well known, and precautions for its use have been repeatedly stressed.

Utilizing an aniline-dye test on serum and urine, von Kaulla and Pulver have shown that Tromexan is more rapidly absorbed than Dicumarol in rabbits.

In human subjects given 900 mg. of Tromexan, the maximum serum concentration occurred in 3 to 6 hours. None could be found in the serum after 24 hours, but minute amounts of Dicumarol were found to persist as long as a week in similar tests.

There is a lag between the peak serum concentration and the prothrombin time. After a single dose of 1500 mg. of Tromexan Burke and Wright reported a prothrombin time of 20 to 30 seconds at the end of 24 hours.

Barker, Estes and Mann report similar experiences with initial doses of 1200 and 1500 mg. Six of their patients had prothrombin times within the therapeutic range, that is, 27 to 58 seconds, in 16 to 24 hours.

A similar rapid fall to normal in the prothrombin time, usually within 48 to 60 hours, was observed both by Burke and Wright and by Barker and his associates. This property of rapid absorption and excretion is credited with the extra margin of safety that Tromexan possesses in comparison with Dicumarol.

Advertisements in various medical journals state that Tromexan has proved singularly free from the dangers of hemorrhagic complications. Nevertheless, the authors report 3 instances of serious hemorrhage following the use of Tromexan in a series of 125 patients.

Two of these patients, one with acute pulmonary infarction, the other with an acute coronary artery occlusion and myocardial infarction, had nearly fatal hemorrhages. The third patient had rheumatic heart disease, mitral stenosis, auricular fibrillation and multiple emboli. He died after gross hematuria and a subarachnoid hemorrhage. It is believed that Tromexan was a contributing cause of his death.

In the administration of anticoagulants, it is considered that a therapeutic level has been reached when the prothrombin time is kept between 30 and 50 seconds with the one-stage Quick test, made with undiluted plasma. The ideal level has been stated to lie between two and two and one-half times the control for that day, provided that it is under 20 seconds.

The difficulties in Case 1 arose primarily from the attempt to find a daily maintenance dose. A dose of 300 mg. on May 17, with a prothrombin time of 52 seconds, caused a rise of only 5 seconds, whereas on May 21, with a prothrombin time of 49 seconds, the same dose caused a rise of 311 seconds. One factor that affects this comparison is that on May 17 the prothrombin curve was falling, whereas on May 21 it was rising. This indicates that consideration of the prothrombin time of the current day alone is not sufficient basis on which to determine dosage. The general trend of the prothrombin curve must also be considered. Additional anticoagulant is needed in the presence of a falling curve to maintain a therapeutic level, and less is required when a rising curve is present. This point is illustrated in Case 2, and Case 3 also exhibited a severe reaction to what was considered a therapeutic dose of Tromexan.

These patients had several characteristics in common. They were extremely ill. Their clotting mechanisms were easily deranged. Once deranged, coagulation did not return to normal for several days, even though blood transfusions and vitamin K were given. Yet none of the patients had had previous hemorrhagic tendencies, and each case presented a clear indication for anticoagulant therapy.

In conclusion, it seems apparent that the use of Tromexan is not without hazard. There seems to be no diagnostic criterion that will indicate in advance those patients who may become suddenly sensitive to Tromexan. Although the previously mentioned properties of rapid absorption and excretion do make it somewhat safer than Dicumarol, Tromexan is capable of causing serious or fatal hemorrhage. It behooves anyone using Tromexan to be on guard for signs of hemorrhage and to combat it vigorously when indicated. (New England J. Med., 22 Nov. 1951, R. P. Gripe)

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Treatment of Radiation Sickness with ACTH

The results in the first 14 patients exclusively treated by ACTH are given in the hope of stimulating further investigation along this line.

Only those patients who were treated exclusively with ACTH after other methods of treatment had been discontinued and who have now completed their radiation therapy have been selected for this report. Most of them had received intensive x-ray therapy for several weeks before becoming sufficiently ill to warrant the ACTH treatment. All were treated over the torso. Most of them were given 200 r (in air) of hard x-rays (h.v.l. 4 mm. Cu) daily or thrice weekly through sizable ports (10 x 15 cm., more or less) totaling 2,000 r per port (in air).

Most of the subjects were treated as out-patients, so that the ACTH (10 mg.) was administered only when they came for their x-ray treatments, daily or thrice weekly. Administration was continued until the symptoms of radiation sickness disappeared. X-ray treatments were never decreased or discontinued during the administration of ACTH. Twelve were relieved promptly after a few such injections. In one of these, several relapses occurred, but relief was obtained each time by a few more injections. In the 13th patient response was delayed, possibly due to renal complications incident to the primary disease. The 14th patient died of his primary disease during this study.

It is recommended that ACTH not be administered in sufficiently large doses or for a sufficiently long time to produce untoward side effects. No valid contraindications to the small doses used in this series were encountered.

The results of the study to date indicate that ACTH in small doses promptly relieves the symptoms of radiation sickness. Further work should be done, however, to prove this conclusively and to evaluate this hormone for the treatment of effects of exposure to fission bomb explosions. Somewhat larger doses of ACTH or its intravenous administration may make it possible to administer radiation therapy more intensively. (Radiology, Nov. 1951, K. W. Taber)

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Use of Anticonvulsant Drugs

Approximately 65 to 75 % of patients with convulsive seizures can have their attacks controlled or reduced in frequency by the use of anticonvulsant drugs. Although these drugs are not a cure for epilepsy, their use is the most important step in the treatment of patients with convulsive disorders. They have very little, if any, permanent effect on the underlying physiochemical disturbance which is responsible for seizures, since cessation of a treatment, which has been effective in prevention of seizures, almost regularly results in the prompt recurrence of attacks. Correctly used, however, the drugs can produce very gratifying results in the majority of cases. Indications for use of specific drugs are presented:

Grand mal seizures. For those patients with infrequent grand mal seizures (from 1 to 4 per year), phenobarbital can be tried first because of its high therapeutic index and its relatively low toxicity. When the seizures are more frequent, diphenylhydantoin sodium (Dilantin) is the drug of choice. A combination of diphenylhydantoin sodium and phenobarbital is often more effective than either of the drugs used alone. When these drugs are used in combination, a full therapeutic dose of each drug must be given. Occasionally, methylphenylethyl hydantoin (mesantoin) or a combination of this drug with the diphenylhydantoin sodium will give the best results. If the therapeutic response has been poor after an adequate trial of one or both of these drugs, phethenylate sodium (Thiantoin sodium) may be added. Rarely the bromides or a combination of bromides and phenobarbital or diphenylhydantoin sodium will be most effective.

Psychomotor attacks. The drugs which are effective in the treatment of grand mal seizures are effective in the treatment of patients with psychomotor attacks. Larger doses are required and the results on the whole are not as good as they are in patients with grand mal seizures.

Petit mal attacks. As a rule those drugs which are effective in the treatment of grand mal and psychomotor seizures are not effective in the treatment of patients with petit mal attacks. Trimethadione (Tridione) or Paradione are the drugs of choice in patients with frequent petit mal attacks.

Minor seizures and focal attacks. The same drugs that are effective in the treatment of grand mal and psychomotor seizures are effective against minor seizures and focal attacks. Minor seizures, which appear in patients whose grand mal attacks have been controlled, can occasionally be checked by simply increasing the dose of the drug or drugs that the patient is already taking. If the minor attacks are very infrequent and nonincapacitating, no great effort need be made to treat them.

Petit mal plus other types. When patients are subject to petit mal seizures as well as grand mal or psychomotor seizures, they should receive Tridione or Paradione plus diphenylhydantoin sodium, phenobarbital or mesantoin.

All the anticonvulsant drugs in use at the present time have some drawback, and there is a constant search for a new compound that will be effective against all types of convulsive seizures and that will not have undesirable side effects.

Two such drugs, in particular, have been given fairly extensive clinical trials. One of these compounds, 5-methyl, 5-phenylhydantoin, proved to be more effective than the usual anticonvulsant drugs in that it controlled or reduced the frequency of seizures in 73 % of the patients in whom it was tried. However, the high incidence of allergenic skin reactions accompanying the use of 5-methyl, 5-phenylhydantoin make it impractical to use the drug in its present form.

The other compound, phenylacetylurea (Phenurone) has been given a fairly extensive clinical trial, but there is still no general agreement in regard to its therapeutic value. Some investigators have found it to be effective in controlling or in reducing the frequency of seizures, particularly psychomotor attacks, in 50 % of the patients in whom it was tried. Others, however, have not been able to obtain such good results. In addition, this drug has at least two limiting side effects: a tendency to aggravate personality disturbances with the development of psychoses in some cases, and a tendency to affect the liver. Jaundice, impaired liver function, as shown by the commonly used tests, and fatalities have been reported following the use of Phenurone. This compound has not been marketed as yet, and should it become commercially available, it should be used cautiously, particularly in those cases in which the person gives a history of previous liver dysfunction. Liver function tests should be done frequently on all patients who are given Phenurone.

When a new drug is administered, it should be done so cautiously and the patient watched carefully for the development of toxic side effects. It may be months before these appear. The blood dyscrasias following the use of mesantoin and trimethadione did not appear in some cases until 8 to 20 months after therapy was started. (GP, Nov. 1951, S. Carter)

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Sturge-Weber Disease as an Otolaryngological Problem

Hemangioma about the head and neck is in itself not a rarity in the field of otolaryngology; however a case of hemangioma of the external ear, face, pharyngeal and laryngeal mucosa of sufficient extent to become a source of respiratory obstruction is sufficiently uncommon to warrant presentation.

The following names have at one time or another been used to designate this condition: Sturge-Weber disease, Sturge-Weber-Dimitri disease, Krabbe's disease, Parkes-Weber-Dimitri disease, Weber-Dimitri disease, Sturge-Kalischer disease and encephalotrigeminal angiomatosis. The pathogenesis of the disease appears to be a hemangiomatous formation in the layer of mesenchyme directly bordering upon the ectoderm.

Case Report. The child, 9 weeks old, was born at term and at delivery, which was normal, small multiple hemangiomas were observed to involve the right eyelid, forehead, external ear, scalp, neck, and mucous membranes of the mouth and pharynx. Since birth these hemangiomas had increased in size and had spread. Three weeks prior to admission, the patient began to have respiratory distress, expecially marked after feeding and was becoming progressively

worse. On admission to the hospital the positive physical findings were: large irregular cherry-red lesions of the right side of the head, face and upper right eyelid. There was present a marked inspiratory stridor, with extensive intercostal and epigastric retractions. Moderate moist inspiratory rales were heard over the lungs bilaterally, both anteriorly and posteriorly.

Therapy with humidified oxygen soon resulted in marked improvement. A tracheotomy was done with a bronchoscope in place. The treatment of the skin lesions recommended was the use of radium or solid carbon dioxide. However it was felt that the prognosis was poor and that the airway and its maintenance was the prime consideration. The patient was to be followed at 6 month intervals and subsequent treatments to be given in light of survival.

Various methods of treatment are described in literature; those most frequently mentioned are (1) radiation, including x-rays, radium and radon; (2) sclerosing solutions; (3) solid carbon dioxide; (4) direct ligation, excision or coagulation. The concensus is that most hemangiomas in children are best treated by irradiation. It is known that the resistance of these tumors increases with the age of the patient and that the treatment of hemangioma in adults presents a different problem than the treatment in children. The proximity of the hemangioma to a growth center must of necessity be a consideration in treatment selected. (A. M. A. Arch. Otolaryng., Nov. 1951, R. J. McMahon)

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Surgical Treatment of Parkinsonism: Indications and Results

Parkinsonism, also known as the parkinsonian syndrome and paralysis agitans, is a complex disease process. The clinical picture is bizarre, presenting involuntary movements associated with rigidity which ultimately restricts all voluntary movement. The plight of victims of this disease is truly pathetic. People of normal appearance are gradually transformed into caricatures of their former selves. The abnormal movements make them conspicuous so that they avoid outside contacts and their helplessness progressively increases. Although the etiology and pathology of Parkinsonism are for the most part known, the pathophysiology of symptoms of the disease is not fully known, and the problems of therapy have been baffling.

The disease is most frequently the manifestation of brain lesions resulting from encephalitis or arteriosclerotic disease. Less commonly it results from syphilitic vascular disease, multiple sclerosis, trauma, alcohol or manganese poisoning. Rarely, a slow-growing, deep intracerebral neoplasm may produce a clinical picture similar to that of paralysis agitans. The lesions are most commonly found in the globus pallidus and the substantia nigra of the midbrain; the thalamus, hypothalamus, putamen and cerebral cortex may also be affected. The chronic encephalitic group is said to show selective bilateral involvement of the globus pallidus and the substantia nigra. The arteriosclerotic group shows widespread pathologic changes, the cerebral cortex being involved as well as the globus pallidus and the substantia nigra. Microscopic study has

consistently revealed atrophic changes in the ganglion cells of the globus pallidus and the substantia nigra. Deposition of lipochrome pigment in the cytoplasm, and swelling and disintegration of the cells have been noted.

Tremor is the most prominent symptom of the disease. It is rhythmic and alternating, at a rate of 4 to 7 per second, and is seen most often in the upper extremities, usually in the distal portion. Tremor occurs most frequently in the flexors, extensors, pronators and supinators of the hand and in the flexors, extensors, adductors and abductors of the fingers. In the lower extremities the symptom is manifested as quivering of the knees and to-and-fro shaking of the feet. Tremor may be limited to one side of the body or to one extremity. It is present at rest but may be momentarily lost at the initiation of voluntary movement. In advanced cases tremor is present constantly.

Rigidity may be present in the musculature of the extremities, spine, head, neck or face. It may be associated with tremor or may exist independently. In those cases where rigidity exists without tremor, that symptom alone may be very disabling; in some cases effective voluntary movement is almost impossible. Another manifestation of rigidity is the "masklike" facies. Facial expression is slight and the normal movements of facial muscles associated with emotion are not seen. There may be marked slowness in movement. Initiation of movement is often difficult; once the movement has been started, it may progress smoothly. This symptom is usually associated with muscular rigidity.

The course of the disease is in most cases progressive. Tremor and rigidity increase in severity producing acute discomfort and pain. This is associated with progressive incapacity; ultimately the patient can do very little for himself, requiring constant care.

When the disease has reached a moderately advanced stage, the patient must usually give up his work and find financial support in his family or community. Ultimately, the patient may reach a state of physical and financial helplessness, social isolation and great emotional disturbance.

Study of the therapeutic results in the author's group of cases suggests that the proper indications for cordotomy for section of the lateral and ventral pyramidal tracts in the treatment of Parkinsonism are the following:

1. Relief of tremor is the only symptomatic indication. The results in cases presenting rigidity as the main symptom have been variable.
2. Tremor must be severe and troublesome, without adequate response to thorough medical treatment. All drugs and combinations of drugs should be tested first.
3. Cases with unilateral involvement are to be preferred.
4. Cases with bilateral involvement, in which tremor is severe on only one side, may be considered.
5. Personality of the patient should be optimistic, courageous and buoyant.
6. Weight should be within average range. In obese patients too much weight must be borne by a weakened lower extremity. Walking has been more difficult in obese patients.
7. Age should preferably be under 50.
8. General physical condition should be good.

The results following combined lateral and ventral pyramidotomy have indicated that the chances of improvement are slightly better than 1 out of 3. In this group were a number of patients who do not meet what is now regarded as the proper indications for surgical therapy. If surgery is now limited to those who present these indications, the chances of improvement may be greater.

At this point it might be of interest to consider what the future may hold in the treatment of Parkinsonism. As matters stand now, drug therapy can provide moderate relief for cases presenting slight involvement. Among the cases of moderate and severe involvement, which are only slightly benefited by even the new drugs, some will find relief in the surgical procedures that are known today. These will include cases of unilateral tremor, and occasional cases of bilateral tremor more severe on one side in people of well-integrated personality. However, many cases of moderate and severe involvement have at present no means of significant relief.

There are three possibilities:

1. Prophylaxis - It is possible that advances in the understanding of virus and degenerative diseases may point out methods of preventing the development of the Parkinsonian syndrome. However, this does not appear likely in the near future.

2. Drugs - It is possible that new drugs will be developed which will control symptoms in even the most severe cases.

3. Surgery - Surgery of the nervous system for the relief of tremor and rigidity has almost certainly progressed as far as it can. Since it appears likely that the impulses mediating tremor may travel along all motor pathways, both pyramidal and extrapyramidal, it is improbable that a surgical procedure can be developed which will provide greater relief of tremor with less interference in function. Rigidity has not been consistently relieved by any of the surgical procedures used in Parkinsonism, even though the motor system has been thoroughly investigated. (Bull. New York Acad. Med., Nov. 1951, J. Ebin)

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New Microwave Diathermy Director For Heating Large Regions of the Human Body

Previous studies have indicated that microwave radiations are effective in heating various regions of the human body for therapeutic purposes. There has been a definite need, however, for a director which would distribute the microwave energy over larger regions of the body than is possible with the directors previously available. In an earlier report, the author and his associates described 3 types of directors which cover only relatively small regions of the body.

A director has been developed, clinically very satisfactory, for applying deep heating to areas of the body approximately 8 by 18 inches in size. This new director which has been designated "director U" looks like an elongated corner reflector. The heating pattern, when the director is spaced at a distance

of 5 inches from the surface being irradiated, is quite uniform.

Suitable heating can be produced at distances varying from 3 to 7 in., but optimal and most uniform heating seems usually to occur at a spacing of 5 in. The director U has been fitted with 2 sliding and adjustable spacers made entirely, including the set screws, of plastic material (lucite). These spacers are graduated in inches and can be adjusted to keep the director inthe usual ranges employed most effectively in therapy. The dosage usually should be 120 to 150 ma., 80 to 100 % as recorded by the meter indicating percent of power on the microwave diathermy apparatus.

With this director it is possible to apply heat to one surface of approximately an entire leg or to the full length of an arm. Furthermore, the director can be positioned longitudinally over the back to irradiate the region overlying essentially the full length of the spinal column. Or, the director can be placed transversely across any region of the trunk to produce heating of a wide area. Thus, if it is placed transversely over the lower portion of the back, it will produce suitable diffuse heating of the lumbar region. Other similar applications will undoubtedly suggest themselves. In order to produce satisfactory heating of the tissues, the usual period of time for each application should be 20 to 30 minutes.

This new large director U, which will produce comparatively uniform heating of an area of the body approximately 8 x 18 in. in size in a period of 20 to 30 min. at a dosage of 120 to 150 ma., greatly extends the usefulness of microwave diathermy machines. This long director makes it possible to apply microwave diathermy in many conditions which could not be treated so effectively with the smaller directors previously available. (Arch. Phys. Med., Nov. 1951, F. H. Krusen)

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The Detectability of Yellows, Yellow-Reds and Reds, in Air-Sea Rescue

To the aviator downed at sea, the man adrift in a lifeboat, the man washed overboard, one thing is of primary importance - to be rescued quickly. To be rescued, he must first be detected. It is therefore a vital problem how to increase the visibility of a man bobbing around in the sea.

What color material should be used for life boats, life jackets, foul weather gear, tarpaulins and other life-saving equipment in order to provide optimum detection at sea from the air and from ships? Would the use of detection goggles definitely aid detection?

These two aspects of such a problem were investigated in this exploratory study which was designed to investigate the usefulness of detection goggles and test the effectiveness of the yellow currently used for lifesaving equipment when compared with other colors.

The essential visual elements which are normally present in an operational search for personnel adrift at sea were incorporated as much as possible in the experiment. In a 200 foot outdoor range the observer searched for colored spots,

representing lifeboats or other "ditching" gear, which were mounted on greyish blue cardboard, whose colors and brightness represented the normal range of the appearance of the ocean.

A pair of chlorophyll detection goggles 1635 1/2, was selected as the goggle most likely to enhance color differences between yellow and grey.

Observations were made outdoors in sunlight at distances of 50 to 130 feet from the targets. The test colors were 1/4 " circles mounted on blue-grey boards representing the color of the sea under 3 different weather conditions.

This first study was designed to make a preliminary survey of the color series which would be later tested at sea under actual visibility conditions.

The results of the study indicated (1) that the red-yellow-reds were more visible than yellows of the same brightness; (2) the use of the detection goggles did not increase the visibility of the colors tested; (3) the current yellow is a poor choice for lifesaving equipment. (Proj. NM 003 041.35.01, Naval Medical Research Laboratory, New London, Conn., 27 Sept. 1951)

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Venereal Disease Contact Reporting

On January 1, 1951 a new form for reporting contacts of military personnel infected with venereal disease was put in use by the Armed Forces. The Bureau of Medicine and Surgery issued instructions for use and distribution of this form in an Instruction Memorandum dated 26 October 1950 with page changes for the Interviewer's Aid for VD Contact Investigation, NavMed P-1288.

To date over 225,000 copies of this form have been distributed to naval and marine corps activities; however, many activities are continuing to report that they are unable to get sufficient copies and the delays in replenishment of supplies result in unreported contacts. This is serious in that the contact may go untreated and continue to spread infection to others. Arrangements have been completed for the U. S. Public Health Service to supply all State health officers with a sufficient quantity of these new report forms, Venereal Disease Epidemiologic Report, Form PHS-1421 (VD), to supply requests from the Armed Forces until supply channels are filled. Activities needing these forms should make direct request to the State Health Officer of the State in their immediate area for a stock of forms. Caution should be exercised in requesting forms. Not over a three (3) months supply, based on number of expected cases, should be requested. Overstocking should be avoided.

In early 1952 both the East Coast and West Coast Publication and Distribution Centers will have a sufficient stock to meet all needs. (Preventive Medicine Division, BuMed)

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1951 Scientific Award of American Pharmaceutical Manufacturers' Association

The 1951 Scientific Award of the American Pharmaceutical Manufacturers' Association has been awarded to the Medical Services of the Armed Forces.

Rear Admiral Lamont Pugh, Surgeon General of the Navy, attended the meeting of the Association on November 27, held in New York City, and accepted a certificate in behalf of the Medical Department of the Navy.

The certificate, now displayed in the office of the Surgeon General, reads in part, "In recognition of the numerous scientific contributions in medical research, prophylactic and therapeutic practices and other life-saving measures which have vastly strengthened the defensive and combat forces of our nation...."

Admiral Pugh, in accepting the award stated, "On behalf of the Medical Department of the United States Navy I am proud to accept the Annual Scientific Award of the American Pharmaceutical Manufacturers' Association.... Your recognition of the accomplishments of our personnel is indeed gratifying and my acceptance of the Award is the acceptance of every member of the Medical Department whose contribution has made this event possible."(PIO, BuMed, 5 Dec. 1951)

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The White Mountain Research Station

A high-altitude laboratory will be completed this year in California's White Mountains by the University of California under contract with the Office of Naval Research. This laboratory, The White Mountain Research Station, will be the highest laboratory in the United States yet accessible the year around. The station is approximately 200 miles due east of San Francisco and 250 miles north of Los Angeles. The buildings known as the Lower Laboratory are at 10,500 feet elevation; and at 12,500 feet is the new installation known as the Upper Laboratory.

This installation will rank with the Jungfraujoch Laboratorium in Switzerland at 11,000 feet and the Institute of Andean Biology in Peru at 14,900 feet. Biologists, geneticists, biochemists, botanists, physiologists, physicists, physicians and zoologists, engineers and meteorologists will conduct profitable investigations there. (Bio Sciences Group, ONR)

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Armed Forces Medical Technicians Bulletin Desires Contributions

The editors of the Medical Technicians Bulletin are vitally interested in receiving contributions from any member of the Medical Department who has pertinent and useful material to offer.

Contributions from Medical Service Corps officers of all ranks and from Hospital Corps officers and Hospital Corpsmen of all ratings are particularly desired.

The purpose of the Bulletin is to disseminate administrative, technical and other information that would be of use and interest to personnel of the various branches of the Medical Services of the Armed Forces. Such information would include articles on schools, notes on specialty technics, new ideas on solving administrative and technical problems and achievements on the battlefield or wherever personnel have distinguished themselves in medical activities in any manner. It is suggested that studying the last four editions of the Bulletin will give a potential contributor some idea of the style and form desired.

Contributions should be forwarded to: Medical Technicians Bulletin, Armed Forces Medical Publication Agency, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C. Attention: Code 26.

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NavMed P-5001

Numerous speedletters and dispatches are being received in BuMed concerning annual preventive medicine reports. "A Guide for Preventive Medicine Program and Reports", NavMed P-5001, was distributed to all ships and stations having a Medical Department representative on 30 November 1951.

For clarification purposes, where applicable, subsequent information is being forwarded to Medical Department personnel. (Preventive Medicine Division, BuMed)

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List of Recent Reports Issued by Naval Medical Research Activities

Medical Research Laboratory, U. S. Naval Submarine Base, New London, Conn.

Studies of Carbon Dioxide Toxicity: (1) Chronic CO_2 Toxicity in Submarine Medicine, MRL Report No. 181, NM 002 015.03.05, 21 August 1951

Naval Medical Research Unit No. 4, U. S. Naval Training Center, Great Lakes, Ill.

The Purification and Stabilization of Influenza Virus Antigens for Use in Hemagglutination Inhibition or Complement Fixation Antibody Titrations, NM005 051.06, 1 October 1951

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From the Note Book

1. Rear Admiral Lamont Pugh, Surgeon General of the Navy, presented a paper entitled, "Modern Advances and Trends in Military Medicine" on 7 December at the Fifth Annual Clinical Session of the A. M. A. meeting at Los Angeles, California. (PIO, BuMed, 28 Nov. 1951)

2. The Deputy and Assistant Chief of the Bureau, Rear Admiral Clarence J. Brown, MC, USN, represented the Bureau of Medicine and Surgery in the House of Delegates of the American Medical Association at the Fifth Annual Clinical Session of the American Medical Association, which met in Los Angeles, California, 4-7 December 1951. (PIO, BuMed)

3. The Navy Department has been awarded the National Association of Suggestion Systems Achievement Plaque for the fiscal year 1951 for having the greatest increase in beneficial suggestion participation by its civilian employees. The award was accepted on behalf of the Navy by Rear Admiral W. McL. Hague, Chief, Navy Office of Industrial Relations. (PIO, BuMed)

4. Advertising material for civilian promotion of the Armed Forces Blood Donor Program prepared by the Advertising Council has been distributed to civilian agencies by the Red Cross and to Naval Districts and major continental commands by the Navy's Office of Information, so that local publicity to obtain civilian donors for the Armed Forces Program may be coordinated. At least 150,000 pints of blood must be collected each month from civilian donors to meet the Armed Forces requirements alone. (Public Relations Newsletter, Office of Information, Navy Dept., 23 Nov. 1951)

5. The Audio Signal Delaying Unit, a device which echoes a speaker's voice after a slight delay, is being used by naval aviation medical researchers to improve voice communications. The machine, actually a high speed tape recorder, was developed at the U. S. Naval School of Aviation Medicine, Pensacola, Florida. (PIO, Dept. of Defense, 26 Nov. 1951)

6. A procedure has been devised for freezing and storing at -79° C., 250 ml. quantities of blood, so that sufficient red cells can be recovered for transfusion studies in man. Storage at -79° C. for 2 to 3 hours appears to have no significant effect on the post-transfusion survival of human red cells. Red cells were transfused about 7 days after freezing and thawing and about 11 days after receipt from the donor. The study method opens the way to the possible long storage of red blood cells at very low temperatures. (The Lancet, 10 November 1951, P. L. Mollison & H. A. Sloviter)

7. A desiccation method for determining alcohol and its specificity for the alcohol investigated is described in Journal of Laboratory and Clinical Medicine, November 1951, by H. W. Smith.

8. Discovery of the first successful antidote to beryllium poisoning has been announced by Drs. J. Schubert, M. R. White, A. J. Finkel and A. Lindenbaum of the Argonne National Laboratory, Chicago. The antidote is a chemical (aurin tricarboxylic acid). It reacts with beryllium salts to form a red compound, fixing the beryllium and turning it into an inactive, non-poisonous compound. (Science News Letter, 1 Dec. 1951)

9. Dr. Howard T. Karsner, Research Advisor to the Surgeon General of the Navy, received the University Centennial Award from Northwestern University. The awards were presented to 100 persons who live or did live in one of the 6 states of the original Northwest Territory. (PIO, BuMed, 5 December 1951)

10. Five scholarships of $1,000 each for a year's residency in general practice will be awarded next year under a program approved by the Board of Directors of the American Academy of General Practice. The scholarship fund was created by a grant from Mead Johnson & Company. The fund will be contributed annually. ("Secretary's News Letter", GP, Nov. 1951)

11. A study of a "Special Kind of Acoustic Trauma Produced by Jet Engines" will be found in A. M. A. Archives of Otolaryngology, November 1951. (L. Ruedi, Zurich, Switzerland; W. Furrer, Berne, Switzerland)

12. A good article on "Obstetric Helps" appears in Illinois Medical Journal, November 1951, C. O. McCormick.

13. The first volume of the International Pharmacopeia has been released in English and French and will be released soon in Spanish, it was announced by the World Health Organization. (Drug Topics, 3 Dec. 1951)

14. The use of high intensity electrons as a tool for preparation of vaccines, particularly rabies vaccine, appears in Journal of Immunology, November 1951. (F. B. Traub, U. Friedemann, A. Brasch & W. Huber)

15. The clinical value of cortisone and ACTH in ocular disease, a preliminary assessment for the Medical Research Council appears in the British Journal of Ophthalmology, November 1951, by Sir Stewart Duke-Elder.

16. A report of 84 cases of coccidioidal meningitis with postmortem findings in 3 cases appears in Annals of Internal Medicine, November 1951, V. E. Jenkins and J. C. Postlewaite.

17. "Smallpox and Variolation and Their Historical Significance in the American Colonies" will be found in the Journal of the Mount Sinai Hospital, November-December 1951, S. Bernstein.

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BUMED CIRCULAR LETTER 51-154 29 November 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: NAVMED-609, Report of Disposition and Expenditures--Remains of Dead; revision of, and necessity for prompt submission

Ref: (a) Art. 23-26, ManMedDept
(b) Art. 23-149, ManMedDept
(c) Art. 17-76(5)(a), ManMedDept

1. NAVMED-609, Report of Disposition and Expenditures--Remains of Dead, has been revised as of November 1951. Copies of this revised form will be available from the district publications and printing offices on or before 15 January 1952.

2. Use of the revised form shall become effective 1 February 1952 and all stocks of previous printings of NAVMED-609 shall then become obsolete and be disposed of.

3. In accordance with reference (a), subject form shall be prepared immediately after disposition and charges are determined, and the original shall be forwarded to the Bureau of Medicine and Surgery.

4. It is of the utmost importance that this Bureau maintain accurate and up-to-date expenditure records. Past experience indicates that expenditure information has not always been submitted or submitted with sufficient promptness to meet administrative requirements. It is therefore imperative that subject form, or NAVSANDA-127, Receipt/Expenditures Invoice, in the case of Army, Air Force, and MSTS dead, be submitted to the Bureau promptly and in all cases prescribed in references (a), (b), and (c).

C. J. Brown
Acting

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BUMED CIRCULAR LETTER 51-155 30 November 1951

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Accommodations for In-Patients

Subj: Maintenance and disposition of clinical records awaiting retirement period

Ref: (a) Executive Order No. 9784 of 25 Sep 1946
(b) Art 23-302, ManMedDept

(c) Art 23-303(6)(d), item 617, ManMedDept

1. Reference (a) provides for the more efficient use and for the transfer and other disposition of government records through the formulation and execution of a continuing program for the effective management and disposition of records.

2. The purpose of the records program of the Medical Department of the Navy is:

a. To secure the retirement of records which are no longer of administrative value in order to make limited filing equipment and space available for the housing of records required by current operations.

b. To adopt and maintain filing systems which will contribute to efficient operations and at the same time facilitate records retirement.

3. Reference (c) directs that the patient's jacket or clinical record shall be "transferred from the medical activity to Naval Records Management Center at Garden City 2 years from date of last admission.... "

4. To utilize filing equipment more effectively, the following example is given as the procedure for maintaining clinical records awaiting the retirement period of reference (c).

a. In January 1952, transfer to the Naval Records Management Center at Garden City all clinical records dates prior to January 1950 (except specific records retained by teaching hospitals in accordance with reference (c)).

b. Pack the clinical records for the year 1950 into cartons (in accordance with reference (b)) for future transferral to the Naval Records Management Center in accordance with the retirement date of reference (c).

c. Keep the 1951 clinical records in file cabinets until January 1953; then pack in cartons and handle in accordance with paragraph 4b.

C. J. Brown
Acting

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-156 3 December 1951

From: Chief, Bureau of Medicine and Surgery
To: All BuMed Management Control Activities

Subj: Procurement of Utility Services for Shore Activities and for Contractor-Operated Government-Owned Facilities

Ref: (a) BuDocks C/L 51-69
(b) BuSandA Manual, Paragraph 23859

Encl: (1) Chief of Naval Material Ltr. M30/CHH:rej of 19 Oct 1951 with enclosure

1. Enclosure (1) is forwarded herewith for the information and guidance of addressees. Attention is invited to references (a) and (b) which, together with enclosure (1), set forth the necessary instructions and procedures to be followed in the procurement of utility services.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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